September 18, 2014.

TO: Rick Hopson, District Ranger, Amador Ranger District, Eldorado National Forest.

FROM: Steve Markman, South Zone Hydrologist, Eldorado National Forest.

SUBJECT: Meadow 09N83-2 (19E01-2) and compliance with Standard & Guideline #100.

Location

Meadow 09N83-2 (19E01-2) is located approximately 2.9 miles south of Lower Blue Lake, Amador Ranger District, Eldorado National Forest.

Proximity of route 19E01 (09N83) to meadow 09N83-2 (19E01-2)

Route 19E01 (09N83) borders a short segment of Deer Creek before crossing the stream, and this segment is less than 30 feet from the stream (Figure 1). Deer Creek flows through the middle of meadow 09N83-2 (19E01-2).

Background

Meadow 09N83-2 (19E01-2) was rated as not being in compliance with Standard and Guideline #100 of the Sierra Nevada Forest Plan Amendment (2004) on July 28, 2011. The primary reason for this rating, as described in the original field survey form, was: *"Downcutting, widening and sedimentation from the road are inhibiting hydrologic conductivity and dropping the water table to allow for conifer encroachment."*

Standard & Guideline #100 states: *Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.*

The original field survey form for meadow 09N83-2 (19E01-2) is the Project Record.

Review of meadow 09N83-2 (19E01-2)

It is my opinion that meadow 09N83-2 (19E01-2) is in compliance with Standard & Guideline (S&G) #100. The evidence for this conclusion - based on a field review of the site on August 27, 2014 - includes the following:

- The channel of Deer Creek is actively re-adjusting itself as the stream flows through extensive alluvial deposits in meadow 09N83-2 (19E01-2). This means that the erosion of the stream channel, particularly at meander bends such as where route 19E01 (09N83) borders the stream (Figure 1), is mostly a natural occurrence and has very little to do with the presence of route 19E01 (09N83). In addition, the erosion of the stream channel at two former and one current

route crossing of the stream is extremely minor when compared to the on-going erosion of the entire stream channel through the meadow.

- Route 19E01 (09N83) is not entrenched into the meadow, there was no water ponded in the road or flowing down the route, and the route occurs in less than 15 percent of the length of the meadow. This means that route 19E01 (09N93) is not intercepting and diverting surface and/or subsurface water from the meadow and routing the water away from the meadow such that the meadow has decreased in size and/or wetness. In addition, the amount of runoff from route 19E01 (09N83) into Deer Creek is negligible when compared to the flow of the stream.
- There are only a few small rills (less than 6 inches in depth) and no gullies that extend from route 19E01 (09N83) into the meadow. This suggests that runoff from route 19E01 (09N83) has not eroded sediment into the meadow such that the size and/or wetness of the meadow has been reduced.

Figure 1. A segment of route 19E01 (09N83) borders Deer Creek and meadow 09N93-2 (19E01-2). The erosion of the stream channel at this location is at the outside of a meander bend.

Steve G. Markman